

Claims

1. A yarn delivery device (1), in particular for knitting machines,

having a yarn delivery wheel (5), around which the yarn (9) to be delivered loops in at least one winding (12) for conveying the yarn (9),

having an electric motor (14) which has a shaft (13) which is connected, fixed against relative rotation, with the yarn delivery wheel (5),

having an angle encoder (17) for detecting the rotated position of the yarn delivery wheel (5), wherein the angle encoder (5) has an angular resolution (s) which is at least so large that the ratio (s/d) between the angular resolution (s) and the diameter (d) of the yarn delivery wheel (5) is greater than 3 mm^{-1} .

2. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) is connected with the shaft (13).

3. The yarn delivery device in accordance with claim 1, characterized in that the shaft (13) is a shaft extending through the electric motor (14), at one of whose ends the yarn delivery wheel (5) is fastened, and on the other end (16) the angle encoder (17).

4. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) is an incremental encoder.

5. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) is an encoder.

6. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) is an optical step

sensor.

7. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) has an angular resolution (s), which is at least so great that the ratio (s/d) between the angular resolution (s) and the diameter (d) of the yarn delivery wheel is greater than 5 mm^{-1} .

8. The yarn delivery device in accordance with claim 1, characterized in that the angle encoder (17) is connected to an actual value input of a control loop (29).

9. The yarn delivery device in accordance with claim 8, characterized in that the control loop (29) has a desired value input which is designed for receiving external desired position signals.

10. The yarn delivery device in accordance with claim 8, characterized in that the control loop (29) is a PD regulator.

11. The yarn delivery device in accordance with claim 8, characterized in that the control loop (29) is connected a tension regulator (38) with a device for disturbance variable compensation.

12. The yarn delivery device in accordance with claim 8, characterized in that control loop (29) is connected with a yarn tension sensor (37) for detecting the yarn tension.

13. The yarn delivery device in accordance with claim 12, characterized in that a comparator circuit (32) is connected to the yarn tension sensor (37), which compares the detected yarn tension with a desired yarn tension and determines a desired position signal from the comparison.

14. The yarn delivery device in accordance with claim

1, characterized in that the electric motor (14) is connected to a regulating circuit (34) which is set up for a dragging mode of operation, in which the current supply to the electric motor (14) causes a torque insufficient for independent yarn conveyance.

15. The yarn delivery device in accordance with claim 14, characterized in that a control circuit (34) is provided, which registers the revolutions of the electric motor (14) in the dragging mode of operation by means of the angle encoder (17).

16. The yarn delivery device in accordance with claim 15, characterized in that an allowance for the positive delivery mode of operation is obtained from the registered revolutions.

18. The yarn delivery device in accordance with claim 16, characterized in that the allowance is obtained from the registered revolutions of several yarn delivery devices (1, 2, 3).